STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION

DATE: March 9 2016

FROM: Matt Urban
Wetlands Program Manager

AT (OFFICE): Department of Transportation
Bureau of Environment

SUBJECT Dredge & Fill Application
Raymond, 29762

TO Gino Infascelli, Public Works Permitting Officer
New Hampshire Wetlands Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Forwarded herewith is the application package prepared by NH DOT Bureau of Bridge Maintenance for the subject Major impact project. This project is classified as Major per Env-Wt 303.02(p). This project is located on NH Route 107 over the Lamprey River in the Town of Raymond NH. The existing bridge (#146/100) has a 94'-0" length and 65'-4" deck width. The proposed work consists of repairing the undermining at the north abutment by installing a concrete toewall and placing riprap. Work also consists of repairing the bridge bearings at both abutments.

This project was reviewed at the Natural Resource Agency Coordination Meeting on April 15th 2015. The minutes from that meeting can be found within this application package.

This project does not require mitigation.

A payment voucher has been processed for this application (Voucher #431273) in the amount of $796.60.

The lead people to contact for this project are Steve Johnson, Assistant Administrator, Bureau of Bridge Maintenance (271-3668 or sjohnson@dot.state.nh.us) or Matt Urban, Wetlands Program Manager, Bureau of Environment (271-3226 or murban@dot.state.nh.us).

If and when this application meets with the approval of the Bureau, please send the permit directly to Matt Urban, Wetlands Program Manager, Bureau of Environment.

MRU:mru
Enclosures

cc:
BOE Original
Town of Raymond (4 copies via certified mail)
Carol Henderson, NH Fish & Game
Edna Feighner, NH Division of Historic Resources (NHDOT Cultural Review within)
Maria Tur, US Fish & Wildlife
Mark Kern, US Environmental Protection Agency
Michael Hicks, US Army Corp of Engineers
Lamprey River Local Advisory Committee (via certified mail)

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES
LAND RESOURCES MANAGEMENT
WETLANDS BUREAU
29 Hazen Drive, PO Box 95, Concord, NH 03302-0095
Phone: (603) 271-2147 Fax: (603) 271-6588
http://des.nh.gov/organization/divisions/water/wetlands

PERMIT APPLICATION

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

1. REVIEW TIME:
Indicate your Review Time below. Refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact) ☐ Expedited Review (Minimum Impact)

2. PROJECT LOCATION:
Separate applications must be filed with each municipality that jurisdictional impacts will occur in.

ADDRESS: **NH Rte. 107 over the Lamprey River** TOWN/CITY: **Raymond**

TAX MAP: BLOCK: LOT: UNIT:

USGS TOPO MAP WATERBODY NAME: **Lamprey River** ☐ NA STREAM WATERSHED SIZE: **70.7 mi2** ☐ NA

LOCATION COORDINATES (If known): **43`01'35.39" 071`09'58.71"** ☒ Latitude/Longitude
☐ UTM ☐ State Plane

3. PROJECT DESCRIPTION:
Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

Rehabilitate the bridge that carries NH Rte. 107 over the Lamprey River (146/100). The existing structure is an IB-C that has a 94'-0" length and 65'-4" deck width. Proposed work consists of repairing the undermining at the north abutment by installing a concrete toewall and placing riprap. Work also consists of repairing the bridge bearings at both abutments.

4. RELATED PERMITS, ENFORCEMENT, EMERGENCY AUTHORIZATION, SHORELAND, ALTERATION OF TERRAIN, ETC...

5. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:
See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB 16 - 0536 .

b. ☒ Designated River the project is in ¼ miles of: Lamprey River ; and
date a copy of the application was sent to Local River Advisory Committee: Month: 3 Day: 9 Year: 2016
NA

6. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I.: **Johnson, Steve W**			
TRUST / COMPANY NAME: **NH Dept. of Transportation**	MAILING ADDRESS: **7 Hazen Drive**		
TOWN/CITY: **Concord**		STATE: **NH**	ZIP CODE: **03302**
EMAIL or FAX: **sjohnson@dot.state.nh.us**	PHONE: **603 271 3667**		
ELECTRONIC COMMUNICATION: By initialing here: SWJ, I hereby authorize DES to communicate all matters relative to this application electronically			

7. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I.:			
TRUST / COMPANY NAME:	MAILING ADDRESS:		
TOWN/CITY:		STATE:	ZIP CODE:
EMAIL or FAX:	PHONE:		
ELECTRONIC COMMUNICATION: By initialing here SWJ, I hereby authorize DES to communicate all matters relative to this application electronically			

8. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.: **Weatherbee, Anthony N**	COMPANY NAME: **NH Dept. of Transportation**		
MAILING ADDRESS: **7 Hazen Drive**			
TOWN/CITY: **Concord**		STATE: **NH**	ZIP CODE: **03302**
EMAIL or FAX: **aweatherbee@dot.state.nh.us**	PHONE: **603-271-3667**		
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize DES to communicate all matters relative to this application electronically			

9. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a copy of the application materials to the NH State Historic Preservation Officer.
8. I authorize DES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of DES correspondence. DES will not forward returned mail.

Property Owner Signature	Print name legibly	Date
Steve W Johnson	STEVE W JOHNSON	2/2/16

MUNICIPAL SIGNATURES

10. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

⇨ Authorized Commission Signature	Print name legibly	Date

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. The Conservation Commission signature should be obtained prior to the submittal of the original application and four copies to the town/city clerk for mailing to the DES.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

11. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 1991), I hereby certify that the applicant has filed five application forms, five detailed plans, and five USGS location maps with the town/city indicated below and I have received and retained certified postal receipts (or copies) for all abutters identified by the applicant.

⇨ Town/City Clerk Signature	Print name legibly	Town/City	Date

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I(d):

1. For applications where "Expedited Review" is checked on page 1, accept the application for mailing only if the Conservation Commission signature has been sought;
2. Collect the postal receipts demonstrating that all abutters and the Local Advisory Committee were sent proper notice;
3. Collect any administrative fees, not to exceed $10 plus the cost of postage by certified mail (RSA 482-A:3,I).
4. IMMEDIATELY sign the original application and four copies in the signature space provided above;
5. Retain one copy of the application form, one complete set of attachments and the postal receipts demonstrating that all abutters and the Local River Advisory Committee were notified and make them reasonably accessible to the public;
6. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board in accordance with RSA 482-A:3, I; and
7. IMMEDIATELY send the ORIGINAL application form, one complete set of attachments and filing fee, by CERTIFIED MAIL to the NHDES Wetlands Bureau at the address indicated on page 1 of this application. (DO NOT HOLD FOR CONSERVATION COMMISSION SIGNATURE).

12. IMPACT AREA:

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact

Permanent: impacts that will remain after the project is complete.

Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

After-the-fact (ATF): work completed prior to receipt of this application by DES. Check box to indicate ATF.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland		☐ ATF		☐ ATF
Scrub-shrub wetland		☐ ATF		☐ ATF
Emergent wetland		☐ ATF		☐ ATF
Wet meadow		☐ ATF		☐ ATF
Intermittent stream		☐ ATF		☐ ATF
Perennial Stream / River	/	☐ ATF	1916 / 165	☐ ATF
Lake / Pond	/	☐ ATF	/	☐ ATF
Bank - Intermittent stream	/	☐ ATF	/	☐ ATF
Bank - Perennial stream / River	499 / 11	☐ ATF	1568 / 60	☐ ATF
Bank - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal water	/	☐ ATF	/	☐ ATF
Salt marsh		☐ ATF		☐ ATF
Sand dune		☐ ATF		☐ ATF
Prime wetland		☐ ATF		☐ ATF
Prime wetland buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed upland in TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
TOTAL	499 / 11		3484 / 225	

13. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of $ 200

☒ Minor or Major Impact Fee: Calculate using the below table below

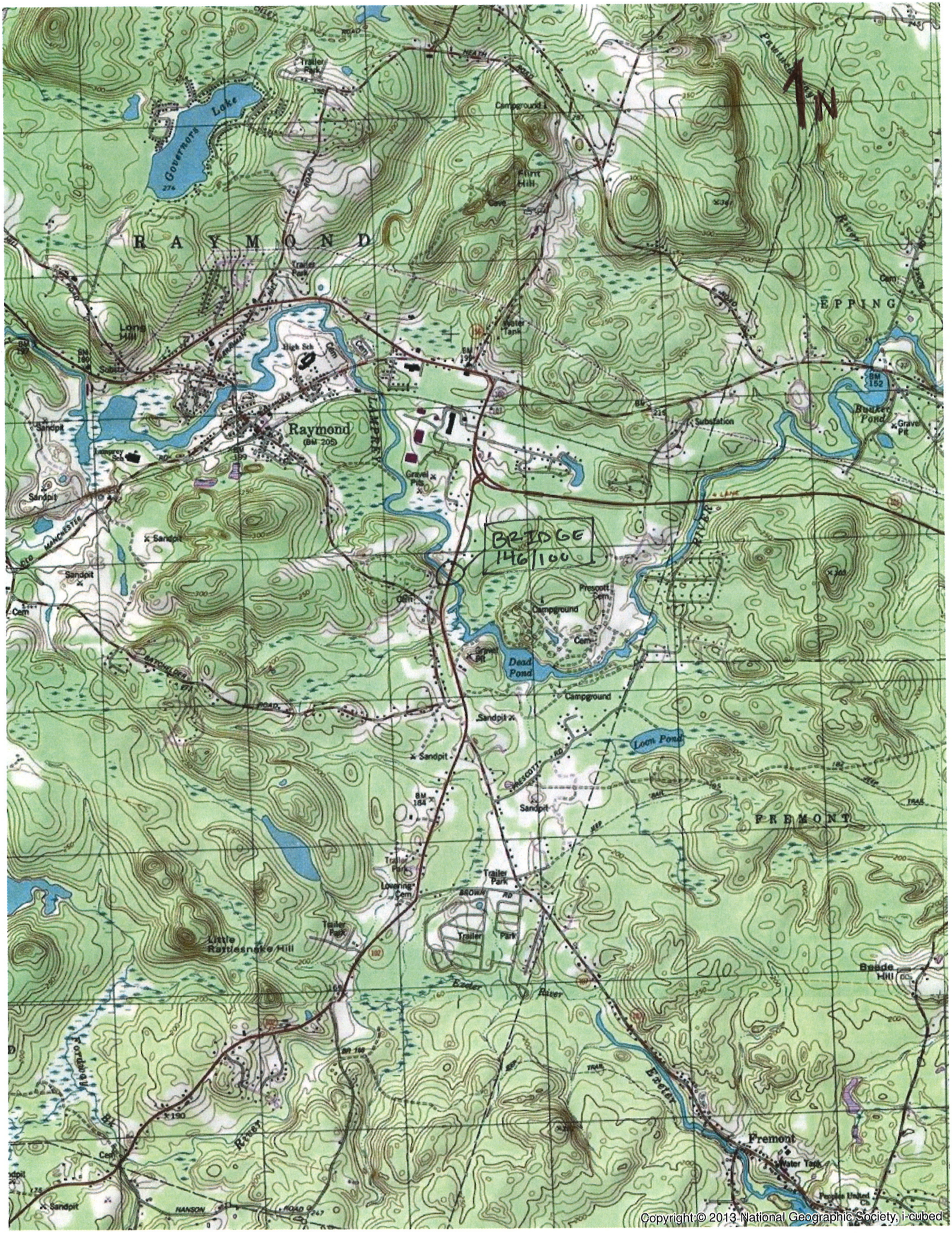
Permanent and Temporary (non-docking)	**3983** sq. ft.	X	$0.20 =	$ **796.60**
Temporary (seasonal) docking structure:	sq. ft.	X	$1.00 =	$
Permanent docking structure:	sq. ft.	X	$2.00 =	$
Projects proposing shoreline structures (including docks) add $200 =				$
Total =				$
The Application Fee is the above calculated Total or $200, whichever is greater =				$ **796.60**

CONSTRUCTION SEQUENCE

1. Stream flow will be maintained through the natural channel.
2. A concrete toewall will be placed in front of the north abutment.
3. Riprap will be repaired in front of the toewall.
4. The bridge bearings will be accessed from the banks and repaired.

Note:

Project will use and maintain DES Best Management Practices at all stages of construction.


1N
RAYMOND
EPPING
FREMONT
Governors Lake
Raymond
(BM 205)
Dead Pond
Loon Pond
Little Rattlesnake Hill
Beede Hill
Fremont
BRIDGE
146/100
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THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES
LAND RESOURCES MANAGEMENT
WETLANDS BUREAU
29 Hazen Drive, PO Box 95, Concord, NH 03302-0095
Phone: (603) 271-2147 Fax: (603) 271-6588
http://des.nh.gov/organization/divisions/water/wetlands/index.htm
Permit Application Status: http://des.nh.gov/onestop/index.htm

PERMIT APPLICATION – ATTACHMENT A
MINOR & MAJOR 20 QUESTIONS

Env-Wt 302.04 Requirements for Application Evaluation – For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

The north abutment on the existing structure is undermined. A concrete toewall needs to be installed to stabilize the abutment. The existing riprap in front of the abutment will be maintained to protect the toewall. The bearings will be accessed from the banks and the bearings will be repaired. It is necessary to impact jurisdictional areas to provide for the repairs and for access. The impacts are for temporary construction access, the concrete toewall, and riprap maintenance. If the structure is not rehabilitated, the bridge will eventually be load posted or closed.

2. That the alternative proposed by the applicant is the one with the least impact to the wetlands or surface waters on site.

The alternatives considered are as follows:

Replace the Entire Structure: with a drainage area of 70.7 square miles which qualifies this stream as a Tier 3 Crossing. The bankfull width is 100'-2"; the required span for a replacement structure based on the NH Stream Crossing Guidelines for a new crossing is 122'-2". A structure of this size typically has an estimated cost of $3,000,000. The environmental impacts for this alternative are much greater because the existing bridge would have to be taken down and a new, larger structure would be built.

Install Concrete Toewall and Repair Bearings: This is the proposed alternative. The concrete toewall is needed to stabilize the north abutment. The existing riprap will be maintained in front of the toewall to protect it from washing out again. The existing bearings will be either cleaned or replaced. The proposed repair has an estimated cost of $60,000. This is the most cost-effective solution and also proposes the least amount of wetland impacts. Replacing the entire structure is not considered practicable since the structure can be repaired more cost effectively and with less environmental impacts.

3. The type and classification of the wetlands involved.

R2UB1: Riverine, lower perennial, unconsolidated bottom, cobble gravel

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

The Lamprey River Watershed consists of six larger rivers, totaling 87.7 miles. These rivers flow south and east converging in the Lamprey River and empty into the Great Bay.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

The Lamprey River is a Designated River with a classification of Rural-Community

6. The surface area of the wetlands that will be impacted.

1916ft^2 Riverine (1916ft^2 temporary, 0ft^2 permanent)
2067ft^2 Bank (1568ft^2 temporary, 499ft^2 permanent)

7. The impact on plants, fish, and wildlife, but not limited to:
   a. Rare, special concern species;
   b. State and federally listed threatened and endangered species;
   c. Species at the extremities of their ranges;
   d. Migratory fish and wildlife;
   e. Exemplary natural communities identified by the DRED-NHB; and
   f. Vernal pools.

a) No rare or special concern species were identified within the proposed project area by NHB.

b) NHB identified Hollow Joe-Pye weed which is a State listed Endangered species within the project limits. Coordination with NHB/DRED has determined that there will be no impacts to the listed species. There will be no clearing required for the proposed work. There will be no effect to NLEB in accordance with the 4(d) rule.

c) There are no species known to be at the extremities of their ranges located in the Lamprey River or the surrounding area.

d) Carol Henderson in the April 15, 2015 Natural Resources Agency Meeting said that during the months of April and May Herring could be disturbed in the area by loud noises. The bearing work will be taking place above the waterline and the toewall will be installed on the bank so noise will not be an issue. Flow will be maintained through the natural channel at all times.

e) The Department has coordinated with DRED and the results of the NHB review revealed no records in this area.

f) There were no vernal pools identified and/or delineated within the project area.

8. The impact of the proposed project on public commerce, navigation and recreation.

During construction, access to the nearby residents and/or commercial businesses will be maintained at all times. Access will not normally be disrupted; but when it is, access will be maintained with at least one lane. The Lamprey River is non-navigable water which makes it non-conducive to boaters. There are no recreational areas that have been identified in this area except for the possibility for fishing. During construction fishing activities from the banks of the brook will need to occur outside of the construction work zone. When construction is completed, the project as proposed will be a benefit to the public commerce.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The project will not significantly interfere with the aesthetic interests of the general public. The proposed improvements will be more pleasing to the eye than the structure in poor condition.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The project will not interfere with or obstruct public rights of passage or access. During construction at least one lane of alternating traffic will be maintained at all times. This will ensure access to all nearby businesses and residential homes in this area.

11. The impact upon the abutting pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to riprap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

The project is expected to have a positive impact on abutting properties. The rehabilitated structure will better serve the abutting properties if they need to travel on the road. The toewall that is being installed will prevent a washout of the structure which will better protect abutting properties.

The project as proposed will not alter the chance of flooding on abutting properties.

12. The benefit of a project to the health, safety, and well-being of the general public.

The project will provide a safer, longer lasting structure and roadway. If the structure is not rehabilitated, the bridge will eventually be load posted or closed. Keeping the roadway open benefits commerce, trade, emergency

access, etc, for the general public.
13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and difference in the quality of water entering and exiting the site.
The proposed project will not significantly alter the existing surface water runoff or storm water discharge locations. Best Management Practices will be used to prevent any adverse effect to water quality during construction.
14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.
Flooding: The concrete toewall will not increase the potential of flooding. The proposed structure is able to pass the 100 year storm event. **Erosion: The concrete toewall placed around the north abutment and riprap will prevent further erosion and preserve the natural alignment and gradient of the stream channel.** **Sedimentation: Nothing that will be a barrier to sediment transport will be installed in this project. Sedimentation in the open channel will not be caused as a result of this project.**
15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.
Surface waters will not be reflected or redirected as a result of this project. The Lamprey River does not have enough surface water for wave energy to be an issue.
16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alternations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage ownership of that wetland and the percentage of that ownership that would be impacted.
The work consists of the repair of an existing bridge structure. There are no similar structures in the vicinity owned by other parties that would require repair.
17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.
The value of the wetland as a habitat for living organisms will be unchanged. A function of The Lamprey River is to carry water from a higher elevation to a lower elevation. This project will not interfere with that function.
18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.
This project is not located in or near any Natural Landmarks listed on the National Register.
19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.
There are no areas named in acts of congress or presidential proclamations as national rivers, national wildness areas, or national lakeshores that will be impacted as a result of this project.
20. The degree to which a project redirects water from one watershed to another.
The project as proposed will not redirect water from one watershed to another.

US Army Corps of Engineers®
New England District

New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		X
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org, specifically the book Natural Community Systems of New Hampshire.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres.		
2.6 What is the size of the existing impervious surface area?	10761 ft²	
2.7 What is the size of the proposed impervious surface area?	10761 ft²	
2.8 What is the % of the impervious area (new and existing) to the overall project site?	0%	
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)	X	
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.		X

3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	X	
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		N/A
5. Historic/Archaeological Resources		
For a minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) shall be sent to the NH Division of Historical Resources as required on Page 5 of the PGP**		N/A

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law..

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGE MAINTENANCE
7 Hazen Drive, PO Box 483, Concord, NH 03302-0095
Phone: (603) 271-3667 Fax: (603) 271-1588

WETLANDS PERMIT APPLICATION – ATTACHMENT C
Stream Crossing Requirements & Information

Env-Wt 904.09(a) – If the applicant believes that installing the structure specified in the applicable rule is not practicable then the applicant may propose an alternative design in accordance with this section.
1. Please explain why the structure specified in the applicable rule is not practicable (Env-Wt 101.69 defines practicable as "*available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes*") *(question 2, Attachment A, Minor and Major 20 Questions)*;
The Lamprey River has a drainage area of 70.7 square miles which qualifies this stream as a Tier 3 Crossing. The required span based on the NH Stream Crossing Guidelines for a new crossing 122'-2". A structure of this size would typically cost approximately $3,000,000. Spending this much money on a structure that could be adequately preserved for approximately $60,000 would not be a practicable use of resources. There would be a significant increase in wetland impacts if a structure of this size were installed due to the additional footprint and for construction.
2. Please explain how the proposed alternative meets the specific design criteria for Tier 2 and Tier 3 crossings to the *maximum extent practicable*. Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings – New Tier 2 stream crossings, replacement Tier 2 crossings that do not meet the requirements of Env-Wt 904.07, and new and replacement Tier 3 crossings shall be designed and constructed…
…In accordance with the NH Stream Crossing Guidelines:
The NH Stream Crossing Guidelines do not mention maintenance to a structure in a Tier 3 watershed. **The proposed structure will match the existing slope and alignment.** **The bottom of the existing structure is currently a natural bottom and it will not be changed as a result of this project.** **Wildlife passage through the proposed structure will be the same as the existing structure. Wildlife will still be able to walk on the bank rather than being forced to cross the road.** **The proposed structure will maintain the flow depths found in the existing structure.** **The proposed structure is expected to be able to pass the 100 year flood event.**
…With bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing:
Water depths and velocities within the crossing at a variety of flows will be comparable to the existing depths and velocities. These flows are comparable to those found in the natural channel upstream and downstream of the stream crossing.
…To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage:
It is not possible to provide vegetated banks on both sides of the watercourse below the roadway, regardless of the type of structure installed.

...To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the function of the natural floodplain *(questions 14 and 15, Attachment A, Minor and Major 20 Questions)*;
The natural alignment and gradient of the stream channel will not be altered as a result of this project. The toewall and will not significantly alter the potential of flooding. The structure can pass the 100 year storm event and this project will not significantly change the capacity. **Surface waters will not be reflected or redirected as a result of this project.**
...To accommodate the 100-year frequency flood and to ensure that there is no increase in flood stages on abutting properties *(questions 11 and 14, Attachment A, Minor and Major 20 Questions)*:
The undermining repairs and the riprap will not significantly alter the potential of flooding. The structure can pass the 100 year storm event and this project will not significantly change the structure capacity. **The project as proposed will not alter the chance of flooding on abutting properties.**
...To simulate a natural stream channel:
The center of the stream channel is currently a natural bottom and will not be changed as a result of this project.
...So as not to alter sediment transport competence *(question 14, Attachment A, Minor and Major 20 Questions)*:
Nothing that will be a barrier to sediment transport will be installed in this project.
Env-Wt 904.09(c)(3) – The alternative design must meet the general design criteria specified in Env-Wt 904.01:
(a) Not be a barrier to sediment transport *(question 14, Attachment A, Minor and Major 20 Questions)*;
Nothing that will be a barrier to sediment transport will be installed in this project.
(b) Prevent the restriction of high flows and maintain existing low flows *(question 14, Attachment A, Minor and Major 20 Questions)*;
The additional toewall will not significantly alter the existing high and low flows.
(c) Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the water body beyond the actual duration of construction *(question 7, Attachment A, Minor and Major 20 Questions)*;
The structure will provide the same degree of aquatic passage as the existing structure.
(d) Not cause an increase in the frequency of flooding or overtopping of banks *(question 14, Attachment A, Minor and Major 20 Questions)*;
The additional toewall will not significantly alter the potential of flooding. The structure can pass the 100 year storm event and this project will not significantly change the capacity. The existing crossing has no history of flooding or overtopping of the banks of the stream. **The project as proposed will not alter the chance of flooding on abutting properties.**
(e) Preserve watercourse connectivity where it currently exists *(question 15, Attachment A, Minor and Major 20 Questions)*;
Connectivity will remain unchanged with the proposed structure and will not be worsened.

(f) Restore watercourse connectivity where...
...connectivity previously was disrupted as a result of human activity(ies) *(question 15, Attachment A, Minor and Major 20 Questions)*;
Connectivity will remain unchanged with the proposed structure and will not be worsened.
...restoration of connectivity will benefit aquatic life upstream or downstream of the crossing *(question 15, Attachment A, Minor and Major 20 Questions)*;
Aquatic life upstream and downstream will not be affected as a result of this project.
(g) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing *(question 14, Attachment A, Minor and Major 20 Questions)*;
The toewalls and riprap will prevent erosion and preserve the natural alignment and gradient of the stream channel. **Nothing that will be a barrier to sediment transport will be installed in this project.**
(h) Not cause water quality degradation *(question 13, Attachment A, Minor and Major 20 Questions)*.
The project as proposed will not impact the quantity or quality of surface and/or groundwater at this site. Best Management Practices will be used to prevent any adverse effect to water quality during construction.

Hydraulic Data

Drainage Area – 70.7 sq mi

Q 100 = 5510 cfs

At the 100 year flood, the proposed structure will pass all flow exiting the existing structure.

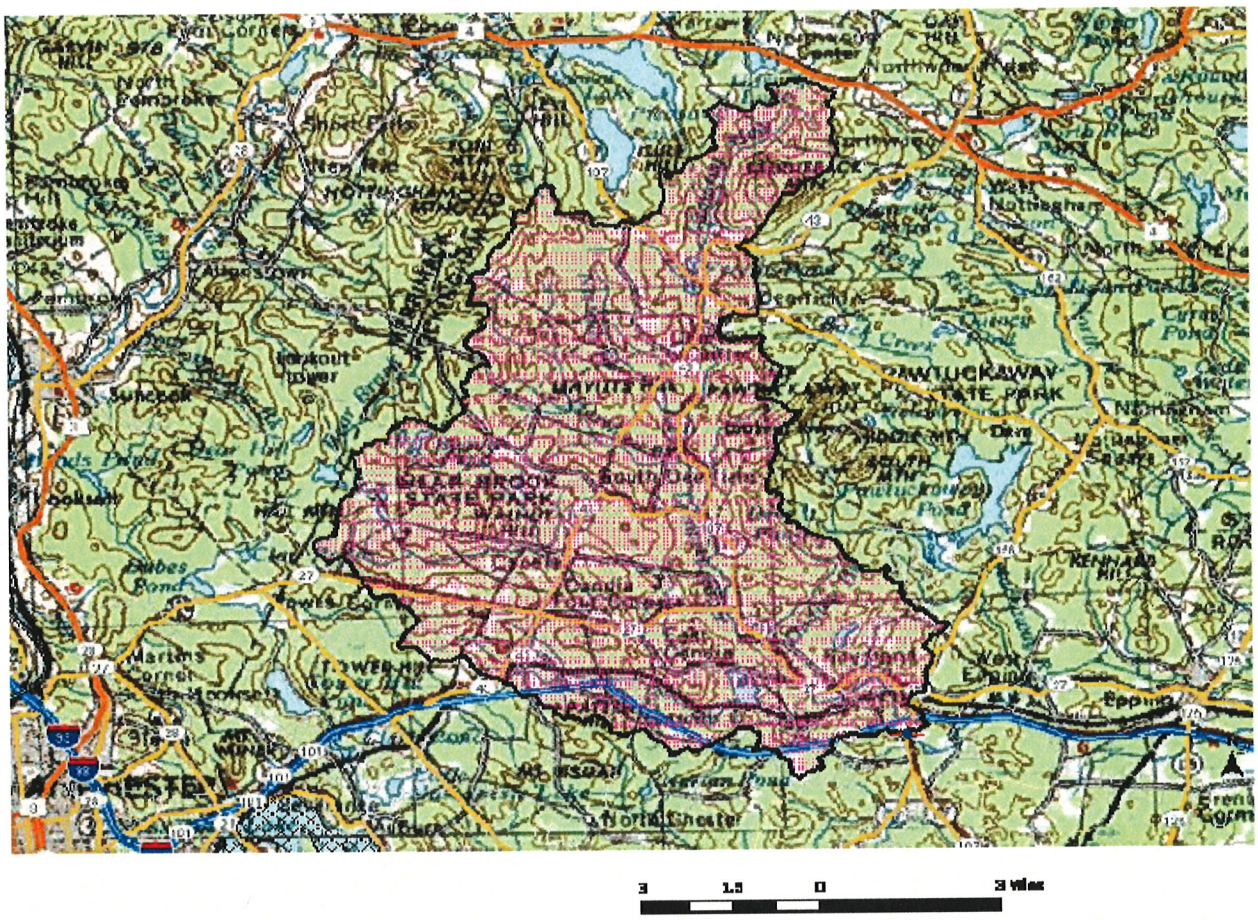


Figure 5: Watershed

PART Env-Wt 404 CRITERIA FOR SHORELINE STABILIZATION

The rehabilitation of the bridge that carries Rte. 107 over the Lamprey River proposes the maintenance of stone fill within areas under the jurisdiction of the NH Wetlands Bureau and the US Army Corps of Engineers. The stone fill will be located in the channel and along the bank of the proposed structure as shown on the plans.

Pursuant to PART Wt 404 Criteria for Shoreline Stabilization, the following addresses each codified section of the Administrative Rules:

Wt 404.01 Least Intrusive Method

The riverbank stabilization treatment proposed is the least intrusive construction method necessary to minimize the disruption to the existing shorelines. The stone treatment can be reasonably constructed utilizing general highway construction methods.

Wt 404.02 Diversion of Water

Proposed roadway drainage will allow storm water run-off to be diverted so that it will flow over vegetated areas, insofar as possible, prior to entering Waterman Brook. This will minimize erosion of the shoreline.

Wt 404.03 Vegetative Stabilization

Natural vegetation will be left undisturbed to the maximum extent possible. The only locations being disturbed are the impacted areas on the plan for construction. All newly developed slopes and disturbed areas will have humus and seed applied for turf establishment, which will help stabilize the project area.

Wt 404.04 Rip-Rap

(a) Stone fill, as proposed, is shown on the attached plans to protect the channel and bank as necessary. Stable embankments are necessary to maintain the structural integrity of the bridge during all flow conditions.

(b) (1-5) The minimum and maximum stone size, the gradation, cross sections of the stone fill, proposed location, and other details have been provided on the attached plans. Bedding for the stone fill will consist of natural ground excavated to the proposed underside of the stone fill.

(b) (6) Enclosed are plan sheets to sufficiently indicate the relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline.

(b) (7) Stone fill is recommended for the limits shown on the attached plans to protect the banks from erosion during flood flows, from scour during all flows, and slopes greater than 2:1 have difficulty supporting vegetation.

(c) This project is not located adjacent to a great pond or water body where the state holds fee simple ownership.

(d) Stone fill is proposed to extend down to and adequately keyed into the channel bottom to prevent possible undermining of the slope.

(e) The enclosed plan has been stamped by a professional engineer.

Memo

NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

To: Tony Weatherbee, New Hampshire Department of Transportation
7 Hazen Drive
Concord, NH 03302

From: Amy Lamb, NH Natural Heritage Bureau
Date: 2/26/2016 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB16-0536 Town: Raymond Location: Bridge that carries NH Rte. 107 over Lamprey River

Description: Rehabilitate the bridge that carries NH Rte. 107 over the Lamprey River (146/100). The existing structure is an IB-C that has a 94'-0" length and 65'-4" deck width. Proposed work consists of repairing the undermining at the north abutment by installing a concrete toewall and placing riprap. Work also consists of repairing the bridge bearings at both abutments.

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: There is a (historical) record for the state-endangered plant hollow Joe-Pye weed in the vicinity of the project area. Since all of our records are not able to be updated frequently, it is possible that the plant could still exist onsite. Please send photos so that I may determine if there is appropriate habitat within work/access areas.

Plant species	State[1]	Federal	Notes
hollow Joe-Pye weed (*Eutrochium fistulosum*)*	E	--	Threats include changes to the hydrology (e.g., water levels) of its habitat and increased sedimentation or nutrients and pollutants in stormwater runoff.

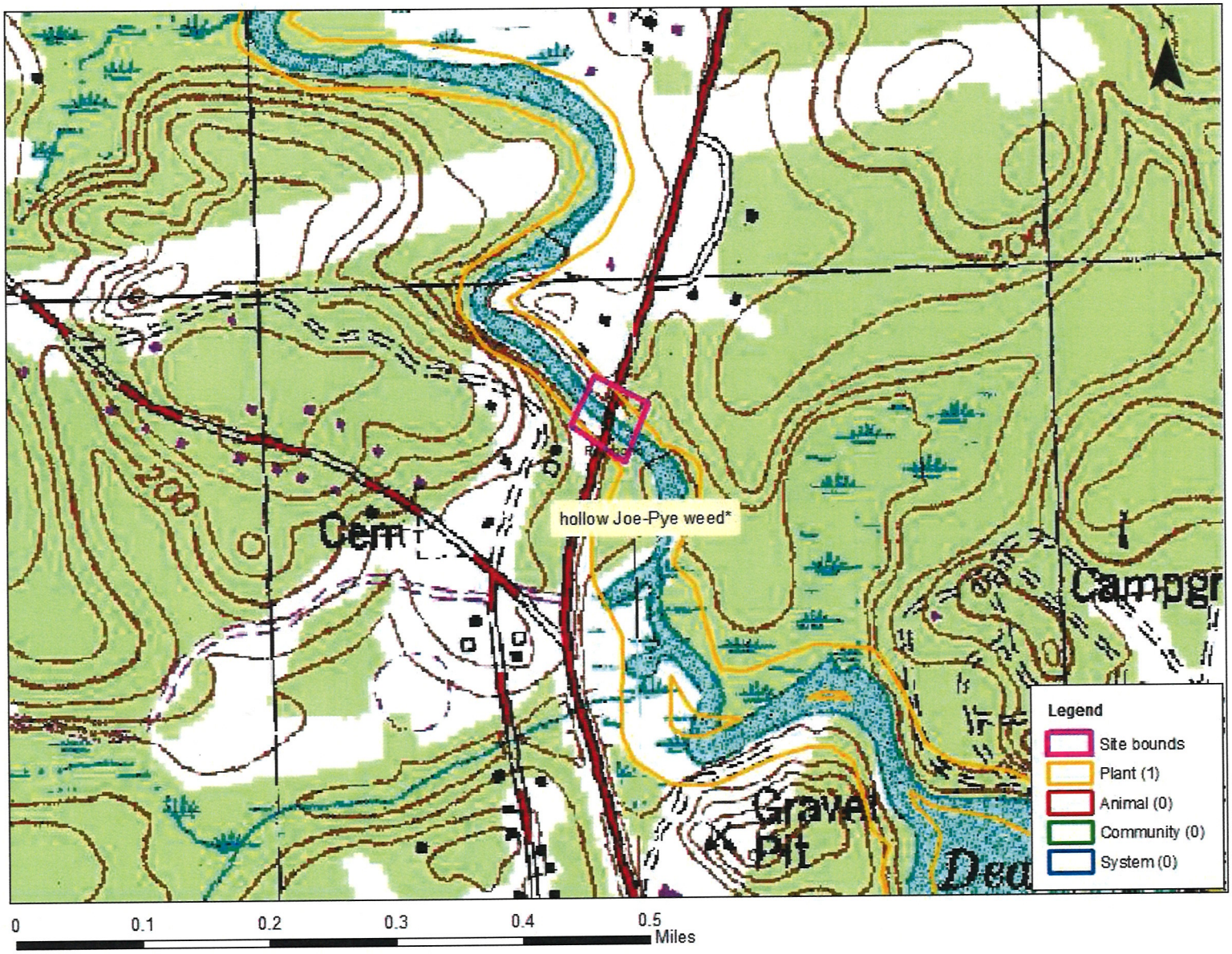
[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Rd.
Concord, NH 03301

NHB16-0536


hollow Joe-Pye weed*
Cem
Campgr
Gravel Pit
Dea
200
200
Legend
Site bounds
Plant (1)
Animal (0)
Community (0)
System (0)
0
0.1
0.2
0.3
0.4
0.5
Miles

New Hampshire Natural Heritage Bureau - Plant Record

hollow Joe-Pye weed (*Eutrochium fistulosum*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
Comments on Rank:

Detailed Description: 1959: Specimen collected.
General Area: 1959: River bank.
General Comments:
Management Comments:

Location

Survey Site Name: Lamprey River
Managed By: Raymond Water Department Land

County: Rockingham
Town(s): Raymond
Size: 304.1 acres
Elevation: 190 feet

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: Lamprey River bank, Rte. 107.

Dates documented

First reported: 1959
Last reported: 1959-09-25

MITIGATION REPORT

Installing a concrete toewall is considered maintenance to an existing structure, therefore mitigation is not required. In the April 15, 2015 Natural Resources Agency Meeting it was stated that mitigation for this project would not be required.

Raymond, non-federal, 29762

Tony Weatherbee provided an overview of the project. The scope of the project is to rehab the bridge that carries NH Rte. 107 over the Lamprey River (146/100). The existing structure is an IB-C that has a 94'-0" length and 65'-4" deck width. Proposed work consists of repairing the undermining at the north abutment by installing a concrete toewall. Temporary scaffolding will be installed to provide access to the bridge bearings so they can be repaired.

Carol Henderson asked if cofferdams will be used. Tony Weatherbee said that they are shown on the plans and permit but they will likely not be used.

Carol Henderson asked what time of the year this project would be done. T Weatherbee said the project would be done in the spring time of 2016. Carol said that April and May could be a concern for Herring.

Lori Sommer said that no mitigation would be required.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Wetland Application – NHDOT Cultural Resources Review

For the purpose of compliance with regulations of the National Historic Preservation Act, the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the US Army Corps of Engineers' *Appendix C*, and/or state regulation RSA 227-C:9, *Directive for Cooperation in the Protection of Historic Resources*, the NHDOT Cultural Resources Program has reviewed the enclosed Standard Dredge and Fill Application for potential impacts to historic properties.

Above Ground Review

Known/approximate age of structure: 1962/1996
NH RT 107 over Lamprey River (146/100) IB-C
Proposed work consists of repairing the undermining at the north abutment by installing a concrete toe wall, placing riprap, as well as repairing the bridge bearings at both abutments.

☒ No Potential to Cause Effect/No Concerns

☐ Concerns:

Below Ground Review

Recorded Archaeological site: ☒Yes ☐No

Nearest Recorded Archaeological Site Name & Number:
☒Pre-Contact ☐Post-Contact
27-RK-0129 (no name assigned; NH 39-28) – situated near NW quadrant of bridge; west of base of ledge near bridge; point tip and flakes; See Bill White Collection (documentation 6/1/1978)

27-RK-0128 Pine Acres Campground (NH 39-27)– situated near NE quadrant of bridge; possible Native American mortar found in River (see sketch map location) (documentation 6/1/1978)

Distance from Project Area: Adjacent to bridge, See above

☒ No Potential to Cause Effect/No Concerns

As there are two known Native American archaeological sites in proximity to the ridge crossing, questions arose as to where will be temporary construction access be located? How will the north abutment of the bridge be accessed for the installation of the concrete toe wall and riprap placement? We also understood that the bearings will be accessed from the banks.

In response to these questions, Tim Boodley (NHDOT Bridge Maintenance) explained in person & in an email dated March 4, 2016:
"I reviewed the subject project site with the Bridge Crew Superintendent that will be performing the work. We will be working in previously disturbed areas adjacent to the northern bridge abutment (as shown in the wetland permit application plan you have) under the bridge. We will be working on top of the long rip rap slope that is currently in place. We will be accessing the work area by walking around the existing concrete wings. There will be no vehicle traffic and we will be staging material and

equipment shacks along the existing/previously disturbed ditch line. You showed me the sketch of the recorded areas of concern, we will not be in or near those areas."

Consequently as access will be on foot and repairs are in previously disturbed areas, we have no concerns. We also understand that the natural alignment and gradient of the stream channel will not be altered. In addition, DOT will not be impacting the old stone bridge abutments west of the bridge.

The proposed activities were also reviewed with Edna Feighner who concurred that she had no concerns (Email to S. Charles on March 7, 2016).

☐ Concerns:

Reviewed by:

Sheila Charles

NHDOT Cultural Resources Staff

3/7/2016

3/7/2016

Date:

Figure 1: South approach (4/2000).

Figure 2: West elevation (4/2000).

Figure 3: Undermining at north abutment (4/2014).

Figure 4: Fixed bearing at south abutment (4/2014).